

ABSTRACT

A device and a method for stabilizing vertebrae in a human spine for the purpose of fixing one vertebra with respect to other vertebrae and with respect to other parts of the spinal column. This device comprises bone screws that clamp to a plate to maintain the plate in contact with the vertebrae. The device may be fabricated from non-metals, metal, alloys, or composite materials. A tapered screw head is pulled into the plate with the taper extending through the plate into the underlying bone. Extending the taper into the bone moves the screw thread stress raiser into an area of lesser deflection. This strengthens the fixation by increasing the rigidity and reducing the risk of screw breakage. Extending the taper into the underlying bone has also been shown to strengthen the taper lock.